

AMENDMENTS TO THE CLAIMS:

The listing of claims shown below will replace all prior versions, and listings, of claims in the Application:

39. (Amended) An electronic device for performing biological operations comprising:

a support substrate,

an array of microlocations disposed on the substrate, the array of microlocations comprising electronically addressable electrodes, the array being formed within a region,

a first collection electrode disposed on the substrate and adjacent to a first side of the array of microlocations,

a second collection electrode disposed on the substrate, and adjacent to a second side of the array of microlocations, the second side of the array being opposite of the first side such that the array of microlocations is disposed between the first collection electrode and the second collection electrode, and at least in part on the opposite side of the region; and

a flow cell, the flow cell adapted to be supported on the substrate and to define a footprint of the flow cell wherein the area of the first collection electrode and second collection electrode in proportion to the footprint of the flow cell is at least 40%.

40. (Cancelled)

42. (Cancelled)

46. (Cancelled)

47. (Cancelled)

48. (Original) The electronic device for performing active biological operations of claim 39 wherein the collection electrode is a complexity reduction electrode.

49. (Original) The electronic device for performing active biological operations of claim 39 further including focusing electrodes.

51. (Amended) The electronic device for performing active biological operations of claim 39 wherein the flow cell defines a footprint such that the combined area of the first collection electrode and second collection electrodes in proportion to the footprint of the flow cell is at least 50%.

52. (Amended) The electronic device for performing active biological operations of claim 39 wherein the flow cell defines a footprint such that the combined area of the first collection electrode and second collection electrodes in proportion to the footprint of the flow cell is at least 60%.

53. (Previously Amended) The electronic device for performing active biological operations of claim 39 wherein the flow cell includes an inlet.

54. (Previously Amended) The electronic device for performing active biological operations of claim 39 wherein the flow cell includes an outlet.

55. (Amended) A method for analysis of a biological sample utilizing an electronic device for performing active biological operations, the device including a support substrate, an array of microlocations disposed on the substrate, the array of microlocations comprising electronically addressable electrodes the array being formed within a region, a

first collection electrode disposed on the substrate and adjacent to a first side of the array of microlocations, and a second collection electrode disposed on the substrate, and adjacent a second side of the array of microlocations, the second side of the array being opposite of the first side such that the array of microlocations is disposed between the first collection electrode and the second collection electrode, and at least in part on the opposite side of the region-, the method comprising the steps of:

providing the sample to the device,

placing the first collection electrode attractive relative to ~~for~~ desired charged biological materials, thereby concentrating charged biological materials on the first collection electrode,

placing the second collection electrode attractive relative to ~~for~~ the desired charged biological materials, relative to the first collection electrode, thereby transporting said charged biological materials from the first collection electrode towards the second collection electrode, and over at least a portion of said array of microlocations disposed on the substrate, whereby interaction between the charged biological materials and the array occurs.

56. (Amended) The method for analysis of a biological sample of claim 55 utilizing an electronic device for performing active biological operations, wherein the electrodes of the array are maintained electrically passive.

57. (Amended) The method for analysis of a biological sample of claim 55 utilizing an electronic device for performing active biological operations, wherein the electrodes of the array are electrically active to facilitate interaction between the array and

the charged biological material.

58. (Original) The method for analysis of a biological sample of claim 55 utilizing an electronic device for performing active biological operations, wherein the charged biological material is moved over the array as a wave.

59. (Cancelled)

60. (Amended) The method for analysis of a biological sample of claim 55 utilizing an electronic device for performing active biological operations, wherein the charged biological material is moved over the array and held in place over the array~~maintained in that lateral position relative to the substrate~~.

115. (Amended) The method for analysis of a biological sample according to claim 55 further comprising the step of applying an AC alternating current field between the first and second collection electrodes so as to hold the charged biological materials over the array.

116. (Amended) The method for analysis of a biological sample according to claim 55, wherein when the second collection electrode is placed attractive relative to charged biological material, the first collection electrode is placed repulsive relative to charged biological material, thereby concentrating charged biological species on the second collection electrode.

117. (Amended) The method for analysis of a biological sample according to claim 55 further comprising the additional steps of placing the second collection electrode repulsive relative to charged biological material and placing the first collection electrode attractive relative to charged biological material, thereby concentrating charged biological

species on the first collection electrode.